

EUGENICS AND PUBLIC HEALTH.

AS social effort becomes more co-ordinated in the countries of Western Europe it is possible to foresee the time when fairly complete records of their inhabitants will be available for examination and analysis. To the Eugenist such records will be of immense value, as they will throw light on the complicated problems of human heredity and enable the social policy of the future to be so framed as to conduce to the racial improvement of mankind.

One of the most powerful agencies for collecting such information is the Public Health service. Once this body is awake to the racial bearing of its work, and considers what policy of social hygiene is best calculated to raise the inherent capacity for health in the general community, we may hope to improve "the racial quality of future generations." Indications are not wanting that the awakening of the medical eugenic conscience is at hand. The Public Health Conference met in Paris (May 15-20) this year, and for the second time in its history, devoted a whole section to work concerned with "Eugenics and Child Study." The conference was bi-national, and as many French as English members participated, both as readers of papers and members of the audience. The recent formation of the "Société Française d'Eugénique" resulted in the attendance at the section of a number of its members, who took a very prominent part in the proceedings, in organising the section, in reading papers, and above all, in keenly discussing the contributions.

Monsieur Lucien March, Registrar-General of France, and Treasurer of the "Société Française d'Eugénique," presided at the meetings. Twenty-nine papers in all were contributed, and were grouped as shown in the appended programme. They fall, more or less naturally, into two groups:

Group I.—*Eugenics*, comprising those papers which have a direct bearing on the inborn qualities of future generations.

Group II.—*Child Study*, including pre- and post-natal hygiene, etc.

The Eugenic group contained some dozen papers, the majority of which rose to a distinctly high level. They fulfilled the main requirements of conference contributions in giving a clear presentation of various branches of work, and being provocative of thought and discussion.

M. March, in his opening address, answered some of the points raised by opponents to Eugenics, and defined the Eugenic ideal as the progressive development of races. He denied that any attempt at racial improvement pre-supposed the "neglect of those sentiments and feelings which are the flower of civilisation," but, expressed the belief that through the aid of the affections, reasoned selection would tend to bring about the desired results. The cruel methods of nature would not be re-introduced, but the attempt made to attain the same ends by more kindly means. The conception of life would be enlarged to include the future, and with the increase of knowledge of the laws governing human development, the road of continuous racial improvement would become clear, and form the ultimate goal of civilisation.

The consideration of health as a factor in racial evolution was treated from the broadest standpoint by Professor Lindsay. Hitherto disease has been regarded mainly as an isolated condition, and considered from the medical standpoint of immediate cure rather than in its racial aspect as a possible selective agency.¹

The subject of Eugenics extends over so wide a field, that it is necessary to define what aspect of it comes especially within the scope

¹Professor Lindsay's paper appears in full on p. 101.

of the public health official. This was very clearly done by Dr. Saleeby (Eugenics and Public Health). He analysed the problem into the following categories:—

A. Positive Eugenics:—The encouragement of worthy parenthood.

B. Negative Eugenics:—The discouragement of unworthy parenthood.

C. Preventive Eugenics:—The protection of parenthood from racial poisons.

Sections *B.* and *C.* formed the subject of the paper. With reference to *Negative Eugenics (B.)*, the need was emphasised of a drawing a clear distinction between transmissible and non-transmissible defects, and especially of classifying the causes of certain defects, such as deaf-mutism and certain types of paralysis, where the outward appearance may be identical, although in one case the effect is due to inherent and hereditary defect, and the other to acquired disease. In the former case Eugenic standards would require the sufferer to refrain from parenthood, in the latter case there would be no reason for so doing. Dr. Theodore Thomson's classification of mental defect brings this point out clearly.

If those people who cite wonderful cases of mentally deficient or deaf-mute parents having normal offspring would examine into the cause and origin of the defect, they would find in the majority of cases that it is confusion between these two types of defect, not an exception in the working of the laws of heredity, that is responsible for apparent discrepancy between fact and expectation. With reference to what Dr. Saleeby calls "the three great enemies of public health—alcoholism, tuberculosis, and venereal disease—alcoholism in many cases is symptomatic of inherited nervous defect," and "in so far as negative Eugenics strike at stock deficient in self-control and highly susceptible to the charm of narcotics," such families must be discouraged from parenthood. Tuberculosis and venereal disease were still in the experimental stage with regard to the inheritance factor, but both come definitely under the heading of Class *C.*

Preventive Eugenics (C.).—Dr. Saleeby names racial poisons those diseases and drugs which apparently have a directly injurious effect on the germ-plasm, resulting in the birth of defective children. Preventive Eugenics is concerned with protecting potential parents from "racial poisons," among which are included tuberculosis, syphilis, lead and alcohol. The recent work of Bertholet and Stockard was quoted in support of the contention that alcohol acts directly on the germ-plasm.

It is obvious from the differences of opinion still existing among biologists on this important subject, that there is urgent need for further experimental investigations.

The statistical treatment of unanalysed data will not further our knowledge; surely, what is needed is more work on the lines of the experiments recently made by Dr. Mjöen in Norway, and the collection of individual detailed family histories. Here again, cause and effect are obscured, and until the various causes of alcoholism can be clearly classified, it is difficult to lay down any definite recommendations to ensure Eugenic conduct in all cases. As with mental defect and deaf-mutism, there are alcoholic stocks where the tendency is undoubtedly inherited, and hard drinking parents with perfectly normal offspring, so the answer to the problem does not seem to be as simple as the extremists of either school would have us to believe. Here also the need of the Eugenist is more knowledge.

Venereal disease, included as one of the cares of preventive Eugenics, ranked first in the amount of interest aroused at the conference; its incidence, and the best methods of treatment, formed the basis of Dr. Douglas White's paper ("The Suppression of Venereal Diseases"), and was brought forward by a number of other contributors, notably

Dr. Raimondi ("L'Utilité de l'eugénique dans la pratique de l'élevage du nourrisson"), Dr. Apert, Dr. Saleeby, and Dr. Theodore Thomson. The need for immediate action is keenly realised, and all were agreed that the amount of defect directly attributable to this disease is greater than to any other, and the degrading effect on offspring is but too well-established. The nature of the disease, together with the recent discovery of a more rapid and certain method of treatment by Ehrlich, brings it directly within the scope of public health administration. Dr. White regretted that with regard to cancer and tuberculosis public interest had outstripped medical knowledge; vast sums were available for research into the causation and treatment of both diseases, and already extensive provisions for sanatoria treatment of tuberculosis had been made, while the lasting benefit of such treatment was still uncertain, but with syphilis the case is reversed. "Ehrlich has given the cure, yet the public remain apathetic, looking on the discovery more as an academic triumph than a vast opportunity, and do not realise it has brought the national treatment of the disease within the bounds of practical politics." Although it is suggested that the disease has been steadily decreasing in the United Kingdom during the last 40 years, the decrease being shown both in the Registrar-General's returns, and the number of affected recruits, this is not confirmed by other facts. In those diseases and defects which are mainly the outcome of syphilis, such as "aneurism, tabes, and general paralysis, we find the numbers are not decreasing at all, but are practically rising in proportion to the population."

Dr. White quoted the recent attempt made by the Australian State Board of Health to obtain in Melbourne some measure of the incidence of the disease in the general population. The investigations were made under the direction of Dr. Ham, medical officer of health. They came to the conclusion that about 7 per cent of the whole population of Melbourne was syphilitic, *i.e.*, 42,000 in a population of 600,000. A similar proportion would bring the figures for greater London to 500,000 (such figures would include all stages of the disease).

Dr. Raimondi ("Utilité de l'eugénique dans la pratique de l'élevage du nourrisson") gave an account of the methods used at the Pouponnière, especially with regard to infected parents and children.

All those who deal with the subject recommended the same general policy:—

- I. *Cure*.—That sufficient facilities for treatment should be provided and steps taken to encourage the public to make use of them.
- II. *Prevention*.—That efforts should be made to introduce into the educational systems sound teaching on sex hygiene, which would go far to guard the younger generation against infection.
- III. *Research*.—In the interests, both of medicine and Eugenics, the fullest possible records should be kept, both at hospitals and in private practice.

This last recommendation does not apply only to one disease.

Dr. Apert gave a very necessary definition of Eugenics, pointing out wherein it differed from "puériculture" or child study. It is a point that needs continual reiteration, as so often those engaged in excellent and much-needed social reform, concerning regulations of maternal health, facilities for infant feeding, schools for mothers, and many other valuable institution, plead for interest on the ground that they are *eugenic*. Their eugenic bearing, if any, is very indirect, as Eugenics is concerned with the inborn characters of future generations, and unless it is proved that such institutions preserve a proportionately larger number of fit babies they are not eugenic, although they may reduce the death-rate.

Dr. Apert points this out very clearly, defining negative and constructive Eugenics, and outlining a possible policy. From the recent genetic studies he takes an optimistic view of the possible application of the laws of heredity to human evolution in the future, but lays stress on the fact that, except on one or two small points, legislation at present would be premature.

One point where legislative action would be possible was raised by Dr. A. Broca ("La logement des familles nombreuses"). It is always important to encourage the birth-rate among the fit, more so than ever in a country like France, where the "Commission sur la Dépopulation" is still at work. The practical difficulty in Paris, as in all large French towns, that confronts the working man with several children is that of obtaining housing accommodation. The landlord of the prevalent tenement building usually lets in three-roomed flats, and objects to small children, as their presence reduces the value of the whole property. In order to remedy these conditions, a number of capitalists have combined under the name of *Le Société Anonyme des Logements Économiques pour Familles Nombreuses*.

The object of the society is to purchase or construct tenement buildings, letting four-roomed flats at the usual three-room rent (£18 per annum), and as tenants, give preference to parents of large families. From the profits 3 per cent. is paid to the shareholders on their capital, and the surplus has been found sufficient to allow for reductions in the rents paid by the tenants. These reductions are made on the following grounds: The society realises that children below the age of 16 cannot contribute to the family income, a reduction is therefore made in the rent of each family having four or more children (in the case of widows, every child beyond the third entitles them to the reduction). For every child below 13 the reduction is 24 fr. per annum; between 13 and 14 years, 16 fr. per annum; and between 14 and 15, 8 fr. per annum. The result of this policy has been a very considerable increase among the tenants in the number of children born during the years the buildings have been open. It was, of course, only to be expected that the proportion of children would be high, as large families would gravitate towards them in the first place. In December, 1912, in four tenement buildings out of a total population of 2,652, the children numbered 1,857, a proportion of 4·8 per family, the highest in any part of Paris. One family of eight obtains a reduction of 120 fr. rent per annum, a very considerable assistance to a family earning from 30 to 48 francs a week. At present there are about 10 births per annum for every 100 families, and each year about four children reach the age of 16. Therefore, the net increase of those on account of whom a reduction is made is about six per 100 families. That the total loss on unpaid rent has not exceeded 1 per cent. speaks well for the type of workmen accepted, and it is hoped that the movement will continue, and prove to be really Eugenic in its effect.

One regrets that public opinion is not far enough advanced to enable the administrators to give preference among applicants for accommodation to those families most likely to carry on a healthy and sound stock. That this is done indirectly to some extent already, is shown by the very low disease and death-rate returns given in the report issued by the Society.

The general question of heredity was raised on several occasions, and especial interest attaches to Professor Houssay's paper, "Eugénique et régimes alimentaires," in which he describes some experiments in the feeding of poultry. Professor Houssay wished to ascertain whether a change of diet in one generation of poultry would effect the type or quality of the offspring, and if so, whether the differences would be transmitted to future generations.

He found, by feeding poultry on fresh raw meat, that at first they improved in size, weight, and plumage, but shortly began to deteriorate. In egg-laying capacity, in three consecutive years, the figures were 27·2,

18.6, 6.35 per cent. Of these eggs the fertility varied considerably, both from generation to generation and also in proportion to the size of the individual hen. The longer the treatment had continued, the lower the percentage of fertile eggs. Even in one season the viability of the eggs of the same hens fell to zero, none of them in the later months developing beyond the fourth or fifth day. Another point gained from the experience of rearing six generations, was that the vitality of the chicks hatched varied in relation to the time the ancestors had been fed on raw meat. Professor Houssay drew the conclusion that an insidious food poison might thus kill off a race in six generations, and that a comparison should not only be made with alcohol, but that any food was a possible deteriorating agency. Civilisation had drawn man far from his natural form of nourishment. Danger is greater for those who live in ease and luxury, as it is the surplus food taken into the system which creates the poisons and causes degeneration of tissue, therefore it is in the leisured classes one would expect to see the decline in fertility and vitality. In Professor Houssay's opinion it is more than probable that the present degeneracy and low birth-rate among the upper classes may be in part owing to poisoning due to unsuitable and unstinted food.

Dr. Hyslop and Dr. Theodore Thomson discussed the nature of the two most important Eugenic problems, the former taking the origin and nature of genius, the latter, the origin and nature of mental defect.

Dr. Hyslop ("The Inheritance of Mental Characters") gave the term genius the meaning of emotional and artistic development, rather than the meaning attached to it by Sir Francis Galton. The latter, in "Hereditary Genius," collected evidence of the inheritance of marked ability, and its constant re-appearance in the same families, thus using genius to indicate what is usually termed talent or ability.

The genius dealt with by Dr. Hyslop was the type that is "akin to madness." Dr. Hyslop's analysis of the opinions of various writers on the subject tended to show that the diversity of opinion as to its inheritance was mainly due to the different sense in which the term genius was used. Whatever may be the opinion on that point, there is considerable evidence of the strength of the hereditary factor in many mental traits. Dr. Hyslop notes, for instance, "that emigration appears to have no influence in modifying the ratio of the insane to the sane, *i.e.*, environment is apparently insufficient to account for much."

Dr. Theodore Thomson ("The Prevention of Mental Defect in Children") supported Dr. Hyslop in his contention that much of the confusion as to the inheritance of mental defect arose from failure to analyse its causes. His effort to bring order into chaos was so successful that one cannot do better than reproduce the main heads of the classification.

Starting from the two main groups—

- I. In which the mental deficiency is the result of a developmental defect, and
- II. In which an apparently normal development has been arrested by some extraneous cause.

These are termed primary and secondary amentia.

Primary amentia includes—

- (1) A large group of unclassified cases, where the main symptom is mental defect and no peculiarities of bodily defect accompany it.
- (2) A group of cases where the mental defect is accompanied by bodily abnormalities (*e.g.*, microcephalus, mongolism, etc.).
- (3) A group of cases in which, in addition to mental defect, there is evidence of a local lesion in the brain (*e.g.*, diplegic cases, word deafness and word blindness).

Secondary amentia includes—

- (1) Cases due to gross cerebral lesions (*e.g.*, meningeal hæmorrhage at birth, meningitis, congenital syphilis, etc.).
- (2) Cases following intractable idiopathic epilepsy.
- (3) Cases due to cretinism, alcoholism, improper nutrition.
- (4) Cases arising from sense deprivation (if untreated), blindness, or deafness.

The causes of primary amentia may be looked for first in neurotic heredity. Ashly found it present in 75 per cent. of his cases. Parental alcoholism is found in about 15 per cent. of cases, but though this may have a direct influence in the unborn child, "it may also be the manifestation of the neurotic strain in the parents."

Dr. Ettie Sayer supports Dr. Thomson in his measure of the intensity of the inheritance factor in mental defect. As Assistant Medical Officer to the London County Council, Dr. Sayer had experience working in the special schools for the mentally defective. A very interesting account is given of an investigation, lasting over two years (1904-6), into the family histories of inmates of these schools. To avoid selection the name of every seventh child in the school registers was taken and the family history followed up; the same process being adopted in a normal school.

The differences between the family conditions in the two sets is illustrated in the following table:—

	Family conditions of 100 Mentally Defective children.	Family Conditions of 100 Normal children.
Family History of Insanity	31	7
Family History of Epilepsy	11	6
Family History of Tubercle	66	39
Parent Mentally Defective	34	2
Parent Alcoholic	42	6
Abject poverty, Mother having insufficient food during whole of pregnancy ...	40	4
Total Number of Children	761	506
Number still alive	467	387
Miscarriages... ..	101	23
Other children Feeble-minded in same family	28	0
Other children Tubercular in same family	10	2

Dr. Sayer advocates the adoption of the colony system for the permanent care of the mentally defective, both as a protective measure for themselves and a safeguard for the future.

We think that Dr. R. Dupuy, in urging the need for special schools under medical supervision for the mentally defective, omits the main consideration, that the care should be permanent. The hope he holds out that the alliance between medicine and pedagogy would enable a large proportion of the feeble-minded to be rendered normal does not seem to be borne out by facts. The defect being, as he himself avers, in many cases due to a physiological defect of the brain.

The student of human heredity is at a great disadvantage, as his material is not available for experiment. It is, therefore, of the utmost importance to obtain large numbers of detailed family histories, and to subject them to analysis. M. L. March ("Les statistiques relatives à l'enfance et le point de vue de l'eugénique") states that even in such a comparatively simple and definite issue as the causes of infantile mortality present methods of enquiry leave several important points obscure. For instance, actual mortality may be measured, but not the extent to which disease is present when not the cause of death. In his opinion biological facts will have to be mainly collected from children, as their grouping in schools and institutions makes it possible to examine them in large numbers. Institutions should be encouraged to keep "individual schedules" for all their members on a uniform scheme and not, as at present, enter the minimum of useful facts in ledgers. M. March gave specimen types of suitable schedules at present in use among three types of organisations:

- (a) Those dealing with the mother during the pre-natal period.
- (b) Those dealing with the child during the post-natal and pre-school period.
- (c) Those dealing with the child during elementary school age.

In class (a) are given those used by the "Mutualité Maternelle" in Paris, and the Women's Municipal League of Boston. Both ask age, occupation (both of father and mother), length of time mother quitted work before confinement, besides the usual personal questions. The Boston Society includes, on the back of the anti-natal schedule, the necessary questions for the post-natal, pre-school period. M. March suggests it is important that all such schedules should register the dates of birth, and sex, of previous children, and especially of the last preceding one, also a more complete history of the father. In France, under the "loi Roussel," all children put out to nurse are subject to medical inspection up to the age of two, the schedule now in use by them was prepared by M. Bertillon, and only contains the minimum of questions necessary to enable the mortality to be correctly analysed. A more complete one is in use by the "Assistance Maternelle," organised by Mlle. Chaptal, which gives the family history from the grandparents.

A model schedule has been drawn up by Mme. Picard, M. March, and Dr. Raimondi (Director of the Institut de Puériculture), which if used for twelve years would give most valuable data.

BULLETIN DE PUERICULTURE.

Enfant entré en No.

I. *Enregistrement*: Nom et prénoms; sexe, date et lieu de naissance.

Entré le; sorti le; pour cause de; mode d'allaitement (avant, après l'entrée); âge au sevrage.

II. *Parents*: Mère vivante; décédée; (quand? causes)—

Père vivant; décédé (quand? causes)—

Âge au mariage (du père, de la mère); âge (du père, de la mère) à la naissance de l'enfant; âge de la mère à la 1^{re} menstruation.

Profession (du père; de la mère).

Nombre des enfants antérieurs nés de la même mère.

La mère a-t-elle fait des fausses couches, combien?

Autres antécédents (du père; de la mère).

III. *Enfant précédents*: Date de la naissance de l'enfant précédent.

A-t-il été élevé par sa mère; allaité au sein; artificiellement?

Si cet enfant est décédé, date du décès? Est-il mort chez ses parents; après retrait de chez une nourrice; chez une nourrice; à l'hôpital?

IV. *Etat de l'enfant*: Accidents survenus au cours de la grossesse.

L'accouchement a-t-il été naturel; artificiel?

L'enfant a-t-il eu des jumeaux? Combien, de quel sexe?

The first example of school age schedules is that in use in the Paris schools, which gives the result of the medical examination made on entering school, the previous illnesses, general health, skin, hair colour, mouth and dentition, the results of physiological examination, intellect, hearing, eyesight.

Later examinations deal with intellectual development, eyesight, illnesses, and other points.

The schedule now in use in the English elementary schools covers much the same ground.

The Eugenic value of these returns could be greatly enhanced by a few additions, such as the profession of the father, the number and ages of other children in the same family, and the individual social position in the family, etc. Of the schedules cited the general criticism applied that all were somewhat vague on certain points, that the only really useful questions for such enquiries were those which dealt with facts and not with opinions. Efforts must be made to convince parents of the Eugenic importance of giving truthful answers to such enquiries, which could be made under the seal of professional secrecy. Dr. Raimondi urged that the doctors should assist in this educational work, as there were many points on which they could collect information. That to which he drew special attention being the influence of the psychological and physical conditions of the parents at the time of conception.

Natural immunity was also a very evident condition of which we had but little accurate knowledge. The influence of parental age on offspring, the after effects of zymotic disease on the parents' capacity to produce vigorous offspring, and many other matters were brought forward and discussed. It is to be hoped that the attention given to the subject, and the definition of some of those problems awaiting solution will inspire the medical profession with the necessary enthusiasm to enlist their co-operation in the Eugenic cause. The doctors should be the priests of the religion of Eugenics; let them hasten to search for the answers to those questions which the laity will be asking them in the near future. They have the opportunity, will they make use of it?

SEANCES.

Vendredi, 16 Mai.

Après-midi.

Ouverture des séances	...	...	...	Le Président.
Eugenics and public health	...	...	...	Dr. C. W. Saleeby.
Eugénique et régimes alimentaires	...	...	...	Professeur F. Houssay.
The influence of disease upon racial fitness	...	...	...
and survival	...	...	...	Professor J. A. Lindsay.
The suppression of venereal diseases	...	...	...	D. White, M.D., M.R.C.S.

*Samedi 17.**Matin.*

Puériculture et eugénique	Dr. E. Apert.
Utilité de l'eugénique dans la pratique de l'élevage du nourrisson	Dr. Raimondi.
The relation of eugenic education to public health	Mrs. S. Gotto.
Quelques notions sur l'hygiène de la femme enceinte	Dr. Lepage.
La puériculture après la conception ...	Mme. Pierre Budin.
La protection d'enfance du 1 ^{er} âge	M. S. Turquan.

Après-midi.

Les consultations de nourrissons	Mlle. Chaptal.
Maternité et mutualité	Mme. le Générale Sée.
Assistance à la mère et à l'enfant de la famille ouvrière	Mme. Alphen Salvador. M. F. Poussineau.
Salles d'allaitement au sein dans les usines	Dr. Lesage. Dr. Falhoen.
Préservation de l'enfant du 1 ^{er} âge contre la tuberculose	Dr. Nobécourt et Dr. Georges Schreiber.

*Lundi 19 Mai.**Matin.*

Le logement des familles nombreuses ...	Dr. Aug. Broca.
The inheritance of mental characters ...	T. B. Hyslop, M.D., M.R.C.P., F.R.S.E.
Prevention of mental defect in children ...	Dr. T. Thomson.
Le rôle du médecin dans l'éducation des enfants arriérés	Dr. Raoul Dupuy.
Defective children and their treatment ...	Dr. Ettie Sayer.

Après-midi.

Les droits de l'enfant	M. E. Drugeon.
La protection légale de la femme pendant la grossesse	Dr. Maxwell.
Protection légale des enfants	Mme. Veil Picard.
Mortalité infantile celle de la 1 ^{ère} année comparée à celle de la 2 ^{ème}	Dr. Bonnenfant.
Mortalité des enfants placés en nourrice ...	M. M. Huber.
Les statistiques relatives à l'enfance et le point de vue de l'eugénique	M. Lucien March.

CLOTURE.